

# **PD5 Keller Opp Exh A - Keller Rpt Addendum**

Expert Analysis – Addendum: Lacey R. Keller



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## Persistent Flagging

My analysis, as previously noted, applied compliance metrics to each record independently. Every month, metrics were re-applied so that an entity (i.e., physician, pharmacy) that was flagged in the previous month was not flagged by default in the following month, which gave the manufacturer credit as if diligence was performed on that entity in that month. Other experts<sup>1</sup> maintained a flag on an entity once that entity was first flagged for prescriptions/purchases by drug code based on the assumption that no due diligence had been performed by defendants. This addendum implements a similar methodology, such that every subsequent transaction of that drug type would also be flagged because the labeler had an unfulfilled obligation to detect and investigate the initial flagged transaction.

### Manufacturer to Prescriber: IQVIA Persistent Flagging

Compliance metrics were applied by drug (e.g., oxycodone, hydrocodone, codeine), meaning the initial date for a physician being flagged for hydrocodone may not necessarily be the initial date for the physician being flagged for codeine. After the first defendant labeler flagged a prescriber for a given drug, it was assumed that all prescriptions for that drug for any defendant labeler would also be flagged. Included below are summary tables describing flagging results in Summit and Cuyahoga Counties, as well as tables containing the percentage of example physicians' prescribing months that were flagged by the compliance metrics.

**Table 1 Flagging Results by Type of Compliance Metric**  
(IQVIA; 1997-2006, 2008-2017 Summit, Cuyahoga)

*Flagging totals are of Defendant Labelers and percentages are based on the counties' total prescriptions. The table is sorted by percent of county physicians.*

Metric	Defendant Labeler Flagged Physicians	% of Counties' Physicians	Defendant Labeler Flagged Prescriptions	% of Counties' Prescriptions	Defendant Labeler Flagged Dosage Units	% of Counties' Dosage Units	Defendant Labeler Flagged MMEs	% of Counties' MMEs
Common Sense	13,375	75.2	19,422,814	79.3	1,021,968,665	76.4	11,752,032,310	77.2
Double National Avg	7,441	41.9	17,432,047	71.1	940,775,956	70.4	11,104,249,438	73.0
Triple National Avg	5,526	31.1	15,319,467	62.5	846,527,403	63.3	10,258,621,920	67.4
McKesson 8,000	204	1.1	3,966,017	16.2	287,607,433	21.5	3,824,311,477	25.1
Any Metric	13,554	76.3	19,834,548	80.9	1,042,157,618	77.9	11,945,998,191	78.5

**Table 2 Number of Physicians Flagged by Compliance Metrics, by Labeler**  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

Labeler	Double National Avg	Triple National Avg	McKesson 8,000	Common Sense	Any Metric
Endo	6,710	5,023	203	11,230	11,385
INSYS	15	14	-	15	15
Johnson & Johnson	740	383	-	1,819	1,904
Mallinckrodt	6,822	5,124	203	12,307	12,445
Purdue	3,667	2,720	141	5,906	6,046
Teva	7,017	5,243	204	11,869	12,031

<sup>1</sup> McCann, Craig J. National Prescription Opiate Litigation. MDL No. 2804. 17-MD-2804. 2019 ¶¶132, ¶136, ¶140, ¶144, ¶148



Table 3 Total Prescriptions Flagged by Compliance Metrics, by Labeler  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

Labeler	Double National Avg	Triple National Avg	McKesson 8,000	Common Sense	Any Metric
Endo	3,400,460	2,992,694	794,570	3,788,841	3,863,994
INSYS	708	697	-	708	708
Johnson & Johnson	140,820	114,898	-	162,905	168,759
Mallinckrodt	6,762,941	5,958,687	1,613,341	7,602,233	7,692,609
Purdue	819,586	759,719	307,020	861,163	871,735
Teva	6,307,532	5,492,772	1,251,086	7,006,964	7,236,743

Table 4 Number of Physicians Flagged by Compliance Metrics, by Specialty  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

*Specialties sorted by the number of physicians that triggered any metric.*

Physician Specialty	Double National Avg	Triple National Avg	McKesson 8,000	Common Sense	Any Metric
Family/General	2,226	1,652	79	4,163	4,207
Dentistry	908	693	-	1,472	1,487
Surgery	913	752	31	1,478	1,482
Emergency/Critical	570	472	1	791	795
Obstetrics/Gynecology	378	255	2	584	586
Pediatrics	251	143	-	527	534
Psychiatry	124	70	3	421	424
Cardiology	203	131	1	393	403
Neurology	160	106	4	385	385
Anesthesiology	86	62	24	327	329
Other Specialty	166	120	-	326	328
Oncology	232	196	5	294	296
Ophthalmology	143	103	1	244	245
Radiology	81	49	-	217	224
Urology	122	100	-	201	201
Gastroenterology/Proctology	111	79	1	194	194
Pathology/Epidemiology	66	39	1	154	158
Dermatology	89	58	-	148	151
Unknown	26	22	10	136	136
Nephrology	78	49	-	131	131
Physical/Occupational Rehabilitation	69	51	7	125	125
Veterinary	49	30	1	92	109
Rheumatology	66	46	2	104	104
Pain Medicine	59	52	29	92	92
Pulmonology	42	32	-	87	87
Orthopedics	51	42	-	65	65
Geriatrics	40	25	1	59	61
Endocrinology	50	36	-	-	50
Administrative/Management	29	20	-	49	49
Allergy/Immunology	20	16	-	46	46
Hematology/Phlebotomy	16	14	1	21	21
Addiction	5	5	-	12	12
Sleep Medicine	2	1	-	11	11
Genetics	3	3	-	8	8
Aerospace/Hyperbaric/Nuclear	3	1	-	7	7
Hepatology	2	1	-	6	6
Medical Toxicology	1	-	-	2	2
Pharmacology	-	-	-	2	2
Nutrition	1	-	-	1	1
Research	-	-	-	-	-

## Flagged Prescriber 1: Dr. Clive Sinoff

Table 5 Percentage of Prescribing Months Flagged by Compliance Metrics: Sinoff (IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	Common Sense	McKesson 8,000	Double National	Triple National	Any Metric
Endo	95.2	72.2	92.9	88.9	95.2
Johnson & Johnson	92.3	-	-	-	92.3
Mallinckrodt	99.2	79.8	93.3	91.6	99.2
Purdue	97.1	62.5	89.4	86.5	97.1
Teva	96.8	75.4	95.2	93.7	96.8

## Flagged Prescriber 2: Dr. Guang Yang

Table 6 Percentage of Prescribing Months Flagged by Compliance Metrics: Yang (IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	Common Sense	McKesson 8,000	Double National	Triple National	Any Metric
Endo	100	95.9	95.9	95.9	100
Johnson & Johnson	98.7	-	100	100	100
Mallinckrodt	99.2	92.1	92.1	92.1	99.2
Purdue	98.9	71.1	98.9	98.9	98.9
Teva	97.6	92.9	92.9	92.9	97.6

## Flagged Prescriber 3: Dr. Ronald Celeste

Table 7 Percentage of Prescribing Months Flagged by Compliance Metrics: Celeste (IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	Common Sense	McKesson 8,000	Double National	Triple National	Any Metric
Endo	99.0	61.0	83.0	81.0	99.0
Johnson & Johnson	73.3	-	73.3	70.0	73.3
Mallinckrodt	100	59.8	82.4	79.4	100
Purdue	100	77.3	97.3	93.3	100
Teva	98.1	59.6	69.2	65.4	98.1

## Flagged Prescriber 4: Dr. James Lundeen

Table 8 Percentage of Prescribing Months Flagged by Compliance Metrics: Lundeen (IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	Common Sense	McKesson 8,000	Double National	Triple National	Any Metric
Endo	96.4	99.4	100	100	100
Johnson & Johnson	99.1	-	81.3	67.3	99.1
Mallinckrodt	96.4	99.4	100	100	100
Purdue	95.1	61.5	100	99.2	100
Teva	96.4	99.4	100	100	100

Flagged Prescriber 5: Dr. Adolph Harper

**Table 9 Percentage of Prescribing Months Flagged by Compliance Metrics: Harper  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)**

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	Common Sense	McKesson 8,000	Double National	Triple National	Any Metric
Endo	94.6	25.1	100	100	100
Johnson & Johnson	-	-	-	-	-
Mallinckrodt	99.4	26.9	100	99.4	100
Purdue	100	25.9	100	100	100
Teva	94.8	24.4	100	100	100

Flagged Prescriber 6: Dr. Syed Jawed Akhtar-Zaidi

**Table 10 Percentage of Prescribing Months Flagged by Compliance Metrics: Akhtar-Zaidi  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)**

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	Common Sense	McKesson 8,000	Double National	Triple National	Any Metric
Endo	96.9	76.4	100	100	100
Johnson & Johnson	95.6	-	99.4	95.6	99.4
Mallinckrodt	94.7	77.4	95.3	95.3	95.3
Purdue	96.9	77.0	100	100	100
Teva	96.9	75.5	97.4	95.8	97.4

### Manufacturer to Pharmacy: Persistent Flagging

Compliance metrics were applied per drug and labeler, assuming that labelers only had access to chargeback data for their own products. This meant that within a given labeler's chargeback data, a pharmacy or practitioner could have been initially flagged on different dates for different drugs. Included below are summary tables describing flagging results in Summit and Cuyahoga Counties, as well as tables containing the percentage of example pharmacies' total chargeback months that were flagged by the compliance metrics.

Table 11 Flagged Chargeback Transactions by Compliance Metric: Persistent Flagging  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Metric Type	Flagged Buyers	% of All Buyers	Flagged Chargebacks	% of All Chargebacks	Flagged Dosage Units	% of All Dosage Units	Total Months Flagged
Double National Average	817	63.4	795,977	74.4	413,362,511	84.0	250
Triple National Average	604	46.9	587,678	54.9	329,383,272	66.9	249
McKesson: 8,000 Rule	293	22.7	376,758	35.2	272,866,606	55.5	229
Masters: Common Sense	1,013	78.6	964,262	90.1	456,630,284	92.8	245
Qualitest (Endo): 30,000 Rule	21	1.6	21,159	2.0	18,509,352	3.8	174
Mallinckrodt: Rolling Average (Double)	821	63.7	750,410	70.1	362,984,834	73.8	233
Mallinckrodt: Rolling Average (Triple)	730	56.6	593,064	55.4	285,499,270	58.0	232
Actavis (Teva): 125% Order Average	946	73.4	930,951	87.0	447,271,579	90.9	246
Teva: 3 SD Above Six Month Mean	765	59.4	753,591	70.4	373,464,255	75.9	246
Multiple Distributors	295	22.9	286,746	26.8	149,264,367	30.3	238
Any Metric	1,065	82.6	1,017,186	95.0	480,766,140	97.7	250

Table 12 Number of Flagged Buyers Attributed to Each Labeler: Persistent Flagging  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Labeler	Total Buyers	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30K	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	487	313	238	175	447	14	393	373	423	372	-	449
Allergan	11	1	-	-	1	-	-	-	1	-	-	2
Endo	439	309	222	19	368	-	298	246	326	243	-	380
Janssen	12	4	4	-	7	-	5	3	5	-	-	7
Mallinckrodt	678	438	313	177	564	10	488	446	557	484	294	595
Par	382	219	130	59	324	-	240	200	308	197	-	333
Purdue	272	117	71	18	230	-	190	128	229	186	49	242
Qualitest	432	284	186	105	360	2	334	317	348	289	-	368
Teva	379	141	87	46	322	-	202	118	291	186	2	330



Table 13 Number of Flagged Dosage Units Attributed to Each Labeler  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30K	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	90,560,370	74,855,860	74,166,900	104,560,775	7,473,100	89,539,165	75,835,405	103,327,600	86,623,245	-	107,921,785
Allergan	600	-	-	200	-	-	-	400	-	-	1,000
Endo	14,383,320	12,619,400	3,256,600	13,646,320	-	9,950,620	6,599,160	12,994,340	9,795,020	-	15,334,020
Janssen	9,940	7,640	-	14,260	-	7,320	2,780	11,600	-	-	14,560
Mallinckrodt	210,705,241	171,676,547	128,613,966	229,778,924	10,840,592	200,925,779	150,471,885	227,558,049	192,306,675	146,397,367	235,332,650
Par	20,692,415	13,438,235	10,996,740	20,557,315	-	9,415,525	8,585,435	17,185,600	8,681,475	-	24,836,605
Purdue	8,627,380	6,895,780	3,452,960	9,023,760	-	5,521,660	3,260,580	9,437,360	7,667,260	2,778,280	10,548,140
Qualitest	37,117,470	26,842,500	24,603,540	44,585,220	195,660	37,420,840	34,776,610	42,033,710	34,871,230	-	47,276,180
Teva	31,265,775	23,047,310	27,775,900	34,463,510	-	10,203,925	5,967,415	34,722,920	33,519,350	88,720	39,501,200

Table 14 Number of Flagged Buyers Attributed to Buyer Business Activity  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Buyer Type	Total Buyers	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30K	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Chain Pharmacy	710	521	386	191	609	8	532	488	575	495	202	627
Retail Pharmacy	523	285	208	100	385	13	285	240	356	268	87	411
Practitioner	57	11	10	2	19	-	4	2	15	2	6	27

Table 15 Number of Flagged Dosage Units Attributed to Buyer Business Activity  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Buyer Type	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30K	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Chain Pharmacy	279,058,568	215,096,147	176,589,314	313,176,487	6,613,516	257,362,583	211,727,133	306,559,330	255,611,082	86,809,769	326,166,788
Retail Pharmacy	133,995,443	114,027,825	96,183,392	143,160,857	11,895,836	105,445,851	73,716,937	140,454,489	117,796,473	62,448,698	154,223,072
Practitioner	308,500	259,300	93,900	292,940	-	176,400	55,200	257,760	56,700	5,900	376,280

## Flagged Pharmacy 1: Marc's 23PU

**Table 16 Percentage of Months Flagged by Compliance Metrics: Marc's 23PU**  
**(Chargebacks – Defendant Labelers; Varies Between 1998-2018)**

*Percentage of months were calculated off a labeler's own chargeback data.*

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30,000	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	39.3	37.4	-	87.9	-	71.0	68.2	77.6	62.6	-	87.9
Mallinckrodt	90.6	89.9	89.3	95.0	-	90.6	90.6	93.7	91.8	75.5	95.0
Par	-	-	-	-	-	-	-	-	-	-	-
Purdue	100.0	100.0	98.3	78.3	-	-	-	88.3	53.3	66.7	100.0
Qualitest	68.2	-	-	75.0	-	25.0	25.0	68.2	61.4	-	79.6
Teva	-	-	-	36.4	-	-	-	27.3	-	-	36.4

## Flagged Pharmacy 2: 8000 Euclid Ave CVS

**Table 17 Percentage of Months Flagged by Compliance Metrics: 8000 Euclid Ave CVS**  
**(Chargebacks – Defendant Labelers; Varies Between 1998-2018)**

*Percentage of months were calculated off a labeler's own chargeback data.*

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30,000	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	83.0	56.6	36.4	95.4	-	87.6	86.8	95.4	81.4	-	96.1
Mallinckrodt	95.4	70.3	54.9	88.7	-	77.4	77.4	92.3	86.2	-	98.0
Par	85.0	67.5	-	77.5	-	2.5	-	72.5	80.0	-	97.5
Qualitest	68.2	61.4	61.4	93.2	-	81.8	79.6	77.3	61.4	-	93.2
Teva	-	-	-	52.6	-	-	-	68.4	-	-	68.4

## Flagged Pharmacy 3: 14525 Euclid Ave Walgreen Co.

**Table 18 Percentage of Months Flagged by Compliance Metrics: 14525 Euclid Ave Walgreen Co.**  
**(Chargebacks – Defendant Labelers; Varies Between 1998-2018)**

*Percentage of months were calculated off a labeler's own chargeback data.*

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30,000	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	67.2	67.2	67.2	88.5	-	68.9	68.9	88.5	52.5	-	88.5
Mallinckrodt	50.7	45.5	-	81.8	-	75.3	75.3	75.3	14.3	58.4	85.7
Par	-	-	-	-	-	-	-	-	-	-	-
Purdue	-	-	-	-	-	-	-	59.4	-	50.0	59.4
Qualitest	69.7	60.6	-	63.6	-	60.6	60.6	54.6	48.5	-	75.8
Teva	88.5	88.5	86.5	96.2	-	96.2	96.2	86.5	94.2	-	98.1



## Flagged Pharmacy 4: New Choice Pharmacy

Table 19 Percentage of Months Flagged by Compliance Metrics: New Choice Pharmacy  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months were calculated off a labeler's own chargeback data.

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30,000	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	98.6	98.6	66.4	90.7	-	47.1	40.7	90.0	80.0	-	98.6
Endo	100.0	100.0	58.1	79.1	-	55.8	55.8	76.7	58.1	-	100.0
Mallinckrodt	100.0	100.0	83.5	90.9	-	55.5	31.1	90.9	82.9	90.2	100.0
Par	63.8	56.9	56.9	79.3	-	63.8	56.9	43.1	39.7	-	81.0
Purdue	69.8	61.3	-	90.6	-	82.1	72.6	87.7	85.9	-	95.3
Qualitest	100.0	100.0	100.0	83.1	-	74.0	70.1	92.2	72.7	-	100.0
Teva	43.4	39.6	28.3	69.8	-	45.3	45.3	54.7	37.7	66.0	73.6

## Flagged Pharmacy 5: Church Square Pharmacy

Table 20 Percentage of Months Flagged by Compliance Metrics: Church Square Pharmacy  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months were calculated off a labeler's own chargeback data.

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30,000	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	70.4	31.6	48.0	93.9	-	81.6	73.5	93.9	77.6	-	93.9
Endo	21.6	-	-	81.1	-	35.1	18.9	81.1	73.0	-	81.1
Mallinckrodt	97.4	92.2	94.8	94.8	-	84.4	67.8	94.8	93.9	93.0	97.4
Par	64.9	59.5	-	94.6	-	81.1	81.1	46.0	21.6	-	97.3
Purdue	100.0	100.0	99.1	90.4	-	82.6	67.0	94.8	89.6	99.1	100.0
Qualitest	81.7	71.8	69.0	95.8	-	80.3	80.3	94.4	88.7	-	97.2
Teva	62.8	62.8	-	86.3	-	88.2	72.6	72.6	72.6	-	98.0

## Flagged Pharmacy 6: 1047 Kenmore Blvd Rite Aid

Table 21 Percentage of Months Flagged by Compliance Metrics: 1047 Kenmore Blvd Rite Aid  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months were calculated off a labeler's own chargeback data.

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Qualitest: 30,000	Mallinckrodt: Rolling Average (2x)	Mallinckrodt: Rolling Average (3x)	Actavis: 125% Order	Teva: 3 Standard Deviations	Multiple Distributor	Any Metric
Actavis	77.8	76.8	-	79.8	-	77.8	77.8	78.8	78.8	-	91.9
Mallinckrodt	87.6	69.7	53.2	94.0	-	89.1	81.6	93.0	96.0	56.7	97.0
Par	25.0	16.7	-	58.3	-	4.2	-	75.0	-	-	75.0
Qualitest	94.4	74.7	66.2	94.4	-	76.1	73.2	84.5	69.0	-	95.8
Teva	-	-	-	50.0	-	-	-	31.3	34.4	-	50.0

## Twelve-Month Trailing National Average

As noted in my analysis, I calculated a national average compliance metric on a monthly basis. This is an approach as an addition to other experts' approaches to calculating national averages. Specifically, the McCann<sup>2</sup> report calculates a rolling monthly national average over the preceding 12 months.

### Manufacturer to Prescriber: Twelve-Month Trailing National Average

Compliance metrics were applied by drug (e.g., oxycodone, hydrocodone, codeine) and prescriber specialty (e.g., pain management, anesthesiology) or business activity (e.g., chain pharmacy, retail pharmacy). Results of applying the compliance metrics are displayed using two methods: applying the metric independently to each month and persisting the flag after the first defendant labeler flagged a prescriber for a given drug. The former did not address whether due-diligence was performed on a doctor that triggered the flag. The latter assumed that no due diligence was performed by defendants and therefore all records for a given prescriber would be flagged in perpetuity. Included below are summary tables describing flagging results in Summit and Cuyahoga Counties, as well as tables containing the percentage of example physicians' prescribing months that were flagged by the compliance metrics.

Table 22 Flagging Results by Type of Compliance Metric  
(IQVIA; 1997-2006, 2008-2017 Summit, Cuyahoga)

*Flagging totals are of Defendant Labelers and percentages are based on the counties' total prescriptions. The table is sorted by percent of county physicians.*

Metric	Defendant Labeler Flagged Physicians	% of Counties' Physicians	Defendant Labeler Flagged Prescriptions	% of Counties' Prescriptions	Defendant Labeler Flagged Dosage Units	% of Counties' Dosage Units	Defendant Labeler Flagged MMEs	% of Counties' MMEs
12 Month Trailing Double National Average	5,028	28.3	10,566,961	43.1	640,691,301	47.9	8,335,244,239	54.8
12 Month Trailing Triple National Average	3,141	17.7	8,148,367	33.3	516,785,092	38.7	7,009,179,232	46.1
Persistent 12 Month Trailing Double National Average	5,028	28.3	13,462,986	54.9	778,799,242	58.2	9,739,066,822	64.0
Persistent 12 Month Trailing Triple Trailing National Average	3,141	17.7	10,452,816	42.7	641,168,478	48.0	8,434,965,300	55.4
Any Metric	5,028	28.3	13,462,986	54.9	778,799,242	58.2	9,739,066,822	64.0

<sup>2</sup> McCann, Craig J. National Prescription Opiate Litigation, MDL No. 2804. 17-MD-2804, 2019 ¶136

Table 23 Number of Physicians Flagged by Compliance Metrics, by Labeler  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	4,192	2,592	4,556	2,823	4,556
INSYS	10	8	13	12	13
Johnson & Johnson	533	323	546	331	546
Mallinckrodt	4,306	2,641	4,692	2,928	4,692
Purdue	1,985	1,280	2,250	1,416	2,250
Teva	4,526	2,797	4,756	2,954	4,756

Table 24 Total Prescriptions Flagged by Compliance Metrics, by Labeler  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	2,183,700	1,688,132	2,665,729	2,085,598	2,665,729
INSYS	669	648	688	684	688
Johnson & Johnson	107,024	86,225	122,783	101,955	122,783
Mallinckrodt	3,935,260	3,010,278	5,185,493	3,968,273	5,185,493
Purdue	648,698	538,325	736,897	649,123	736,897
Teva	3,691,609	2,824,759	4,751,396	3,647,184	4,751,396

Table 25 Number of Physicians Flagged by Compliance Metrics, by Specialty  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

*Specialties sorted by the number of physicians that triggered any metric.*

Physician Specialty	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Family/General	1,336	854	1,336	854	1,336
Dentistry	698	423	698	423	698
Surgery	637	441	637	441	637
Emergency/Critical	339	199	339	199	339
Obstetrics/Gynecology	234	122	234	122	234
Pediatrics	191	100	191	100	191
Oncology	158	118	158	118	158
Cardiology	135	83	135	83	135
Psychiatry	123	74	123	74	123
Ophthalmology	119	73	119	73	119
Other Specialty	119	69	119	69	119
Neurology	99	58	99	58	99
Gastroenterology/Proctology	89	54	89	54	89
Radiology	87	51	87	51	87
Urology	81	50	81	50	81
Anesthesiology	73	46	73	46	73
Dermatology	58	41	58	41	58
Nephrology	48	27	48	27	48
Physical/Occupational Rehabilitation	45	31	45	31	45
Pathology/Epidemiology	42	26	42	26	42
Rheumatology	41	26	41	26	41
Pain Medicine	40	26	40	26	40
Endocrinology	36	18	36	18	36
Orthopedics	31	18	31	18	31
Veterinary	30	22	30	22	30
Pulmonology	28	18	28	18	28
Unknown	27	20	27	20	27
Geriatrics	22	12	22	12	22
Allergy/Immunology	18	12	18	12	18
Administrative/Management	16	10	16	10	16
Hematology/Phlebotomy	13	11	13	11	13
Addiction	5	1	5	1	5
Genetics	3	3	3	3	3
Aerospace/Hyperbaric/Nuclear	2	2	2	2	2
Sleep Medicine	2	1	2	1	2
Medical Toxicology	1	-	1	-	1
Hepatology	1	-	1	-	1
Pharmacology	1	1	1	1	1
Research	-	-	-	-	-
Nutrition	-	-	-	-	-



## Flagged Prescriber 1: Dr. Clive Sinoff

Table 26 Percentage of Prescribing Months Flagged by Compliance Metrics: Sinoff  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	55.6	51.6	82.5	80.2	82.5
Johnson & Johnson	-	-	-	-	-
Mallinckrodt	56.3	50.4	87.4	81.5	87.4
Purdue	45.2	42.3	79.8	77.9	79.8
Teva	54.8	47.6	88.9	81.7	88.9

## Flagged Prescriber 2: Dr. Guang Yang

Table 27 Percentage of Prescribing Months Flagged by Compliance Metrics: Yang  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	91.0	91.0	91.0	91.0	91.0
Johnson & Johnson	92.4	91.1	92.4	92.4	92.4
Mallinckrodt	87.4	87.4	87.4	87.4	87.4
Purdue	92.2	92.2	92.2	92.2	92.2
Teva	88.1	88.1	88.1	88.1	88.1

## Flagged Prescriber 3: Dr. Ronald Celeste

Table 28 Percentage of Prescribing Months Flagged by Compliance Metrics: Celeste  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	63.0	54.0	75.0	68.0	75.0
Johnson & Johnson	70.0	60.0	70.0	60.0	70.0
Mallinckrodt	61.8	54.9	73.5	66.7	73.5
Purdue	69.3	66.7	85.3	82.7	85.3
Teva	53.8	53.8	65.4	65.4	65.4

## Flagged Prescriber 4: Dr. James Lundeen

Table 29 Percentage of Prescribing Months Flagged by Compliance Metrics: Lundeen  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	84.8	84.8	92.1	92.1	92.1
Johnson & Johnson	42.1	14.0	92.5	86.9	92.5
Mallinckrodt	84.9	84.9	92.2	92.2	92.2
Purdue	89.3	89.3	89.3	89.3	89.3
Teva	84.8	84.8	92.1	92.1	92.1

## Flagged Prescriber 5: Dr. Adolph Harper

Table 30 Percentage of Prescribing Months Flagged by Compliance Metrics: Harper  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	85.6	85.6	92.8	92.8	92.8
Johnson & Johnson	-	-	-	-	-
Mallinckrodt	91.7	91.7	99.4	99.4	99.4
Purdue	89.8	89.8	97.0	97.0	97.0
Teva	85.5	84.9	92.4	92.4	92.4

## Flagged Prescriber 6: Dr. Syed Jawed Akhtar-Zaidi

Table 31 Percentage of Prescribing Months Flagged by Compliance Metrics: Akhtar-Zaidi  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Endo	86.9	86.9	93.2	93.2	93.2
Johnson & Johnson	87.3	86.2	93.9	93.9	93.9
Mallinckrodt	87.4	87.4	93.7	93.7	93.7
Purdue	86.9	86.9	93.2	93.2	93.2
Teva	87.0	86.5	93.2	92.7	93.2



### Manufacturer to Pharmacy: Trailing 12 Month Trailing National Average

Compliance metrics were applied per drug, labeler, and business activity (e.g., retail pharmacy, chain pharmacy) assuming labelers only had access to chargeback data for their own products. This meant that within a given labeler's chargeback data, a pharmacy or practitioner could have been initially flagged on different dates for different drugs. Included below are summary tables describing flagging results in Summit and Cuyahoga Counties, as well as tables containing the percentage of example pharmacies' total chargeback months that were flagged by the compliance metrics.

Table 32 Flagged Chargeback Transactions by Compliance Metric (Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Metric Type	Flagged Buyers	% of All Buyers	Flagged Chargebacks	% of All Chargebacks	Flagged Dosage Units	% of All Dosage Units
12 Month Trailing Double National Average	682	52.9	585,624	54.7	334,128,578	67.9
12 Month Trailing Triple National Average	516	40.0	392,967	36.7	248,293,619	50.5
Persistent 12 Month Trailing Double National Average	682	52.9	709,194	66.24	379,137,207	77.1
Persistent 12 Month Trailing Triple National Average	516	40.0	522,676	48.82	302,079,912	61.4
Any Metric	682	52.9	709,194	66.2	379,137,207	77.1

Table 33 Number of Flagged Buyers Attributed to Each Labeler (Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Labeler	Total Buyers	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Actavis	487	286	223	286	223	286
Allergan	11	-	-	-	-	-
Endo	439	239	167	239	167	239
Janssen	12	3	-	3	-	3
Mallinckrodt	678	380	280	380	280	380
Par	382	201	123	201	123	201
Purdue	272	91	41	91	41	91
Qualitest	432	239	165	239	165	239
Teva	379	122	70	122	70	122

Table 34 Number of Flagged Dosage Units Attributed to Each Labeler Average (Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Actavis	74,646,645	54,602,280	84,978,235	67,453,045	84,978,235
Allergan	-	-	-	-	-
Endo	11,175,240	9,112,400	12,759,840	11,057,700	12,759,840
Janssen	3,500	-	4,460	-	4,460
Mallinckrodt	167,534,928	128,318,109	193,707,687	160,195,637	193,707,687
Par	16,843,480	10,743,245	18,582,140	12,698,840	18,582,140
Purdue	6,103,920	4,343,700	7,199,260	5,273,660	7,199,260
Qualitest	27,897,210	20,157,830	30,287,670	22,431,810	30,287,670
Teva	29,923,655	21,016,055	31,617,915	22,969,220	31,617,915

Table 35 Number of Flagged Buyers Attributed to Buyer Business Activity Average (Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Buyer Type	Total Buyers	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Chain Pharmacy	710	436	338	436	338	436
Retail Pharmacy	523	235	172	235	172	235
Practitioner	57	11	6	11	6	11

Table 36 Number of Flagged Dosage Units Attributed to Buyer Business Activity (Chargebacks – Defendant Labelers; Varies Between 1998-2018 Summit, Cuyahoga)

Buyer Type	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Chain Pharmacy	225,424,534	162,298,482	257,341,357	200,427,937	257,341,357
Retail Pharmacy	108,533,404	85,878,957	121,580,950	101,490,035	121,580,950
Practitioner	170,640	116,180	214,900	161,940	214,900

#### Flagged Pharmacy 1: Marc's 23PU

Table 37 Percentage of Months Flagged by Compliance Metrics: Marc's 23PU (Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months were calculated off a labeler's own chargeback data.

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Actavis	15.9	3.7	45.8	13.1	45.8
Mallinckrodt	89.3	83.7	89.3	88.7	89.3
Par	-	-	-	-	-
Purdue	43.3	40.0	98.3	98.3	98.3
Qualitest	-	-	-	-	-
Teva	-	-	-	-	-

#### Flagged Pharmacy 2: 8000 Euclid Ave CVS

Table 38 Percentage of Months Flagged by Compliance Metrics: 8000 Euclid Ave CVS (Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months were calculated off a labeler's own chargeback data.

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Actavis	42.6	26.4	60.5	55.0	60.5
Mallinckrodt	73.9	67.7	91.8	69.7	91.8
Par	62.5	50.0	82.5	77.5	82.5
Qualitest	47.7	38.6	47.7	38.6	47.7
Teva	-	-	-	-	-

Flagged Pharmacy 3: 14525 Euclid Ave Walgreen Co.

**Table 39 Percentage of Months Flagged by Compliance Metrics: 14525 Euclid Ave Walgreen Co.**  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

*Percentage of months were calculated off a labeler's own chargeback data.*

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Any Metric
Actavis	62.3	60.7	62.3	60.7	62.3
Mallinckrodt	22.1	1.3	28.6	20.8	28.6
Par	-	-	-	-	-
Purdue	-	-	-	-	-
Qualitest	33.3	30.3	57.6	57.6	57.6
Teva	84.6	61.5	84.6	76.9	84.6

Flagged Pharmacy 4: New Choice Pharmacy

**Table 40 Percentage of Months Flagged by Compliance Metrics: New Choice Pharmacy**  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

*Percentage of months were calculated off a labeler's own chargeback data.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Actavis	83.6	72.9	93.6	91.4	93.6
Endo	93.0	74.4	97.7	74.4	97.7
Mallinckrodt	98.8	79.9	98.8	98.2	98.8
Par	34.5	12.1	55.2	55.2	55.2
Purdue	31.1	10.4	32.1	27.4	32.1
Qualitest	89.6	67.5	98.7	98.7	98.7
Teva	41.5	35.9	41.5	35.9	41.5

Flagged Pharmacy 5: Church Square Pharmacy

**Table 41 Percentage of Months Flagged by Compliance Metrics: Church Square Pharmacy**  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

*Percentage of months were calculated off a labeler's own chargeback data.*

Labeler	12 Month Trailing Double National Average	12 Month Trailing Triple National Average	Persistent 12 Month Trailing Double National Average	Persistent 12 Month Trailing Triple National Average	Any Metric
Actavis	61.2	27.6	67.4	57.1	67.4
Endo	-	-	-	-	-
Mallinckrodt	92.2	89.6	92.2	89.6	92.2
Par	43.2	43.2	56.8	56.8	56.8
Purdue	99.1	99.1	99.1	99.1	99.1
Qualitest	71.8	54.9	74.7	54.9	74.7
Teva	58.8	56.9	60.8	58.8	60.8

Flagged Pharmacy 6: 1047 Kenmore Blvd Rite Aid

**Table 42 Percentage of Months Flagged by Compliance Metrics: 1047 Kenmore Blvd Rite Aid  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)**

*Percentage of months were calculated off a labeler's own chargeback data.*

Labeler	Double National	Triple National	McKesson: 8,000	Masters: Common Sense	Any Metric
Actavis	31.3	16.2	71.7	59.6	71.7
Mallinckrodt	61.2	44.8	84.6	68.2	84.6
Par	-	-	-	-	-
Qualitest	66.2	64.8	67.6	66.2	67.6
Teva	-	-	-	-	-



## Purdue Compliance Metrics

I received documentation for several Purdue Pharma compliance metrics for which I had sufficient data and descriptions that were new to me in the days immediately prior to filing my initial analysis on April 15, 2019. I am producing this addendum showing the results of applying those compliance metrics.

### Manufacturer to Prescriber: Purdue Compliance Metrics

I was made aware of two compliance metrics for which I had sufficient data and descriptions for implementation to the IQVIA data. The two metrics are described below.

#### 50% Six-Month Increase<sup>3</sup>

A prescriber whose average monthly prescription total for the current six-month period increased by more than 50% as compared to the average monthly prescription total for the preceding six-month period was flagged. This metric was included in Purdue's internal SOM program with the intended use of performing compliance on IQVIA Xponent® data.

#### 75% High Dosage<sup>4</sup>

Any prescriber who was found to prescribe a "large concentration of particular strength prescriptions" was flagged. An entity who wrote more than 75% of prescriptions for OxyContin 40mg and/or OxyContin 80mg within a calendar month was subject to this compliance metric. This guidance was included in Purdue's internal SOM program with the intended use of performing compliance on IQVIA Xponent® data. As such, this compliance metric was only applied to physicians and was not considered applicable to 867 or ARCOS data. Because this metric was developed by Purdue, who manufactured nearly all oxycodone under the brand name of OxyContin, the trade names of OxyContin 40mg and OxyContin 80mg are considered synonymous with the drug and dosage types of oxycodone 40mg and oxycodone 80mg for the purpose of applying this metric to prescriptions written by physicians that were filled by other manufacturers. Prescribers are therefore flagged based on their prescriptions of oxycodone 40mg and oxycodone 80mg as found in the IQVIA Xponent® data.

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<sup>3</sup> PDD1503450012

<sup>4</sup> PDD1503450012

Table 43 Flagging Results by Type of Compliance Metric  
(IQVIA; 1997-2006, 2008-2017 Summit, Cuyahoga)

Flagging totals are of Defendant Labelers and percentages are based on the counties' total prescriptions. The table is sorted by percent of county physicians.

Metric	Defendant Labeler Flagged Physicians	% of Counties' Physicians	Defendant Labeler Flagged Prescriptions	% of Counties' Prescriptions	Defendant Labeler Flagged Dosage Units	% of Counties' Dosage Units	Defendant Labeler Flagged MMEs	% of Counties' MMEs
50% Six-Month Increase	9,987	56.2	1,779,635	7.3	88,927,432	6.7	1,069,183,466	7.0
50% Six-Month Increase - Persistent	9,987	56.2	15,324,819	62.5	816,462,684	61.1	9,370,418,250	61.6
75% High Dosage	526	3.0	1,660	-	109,829	-	8,329,569	0.1
75% High Dosage - Persistent	526	3.0	119,350	0.5	8,238,455	0.6	158,573,519	1.0
Triggered Any Metric	10,058	56.6	15,329,437	62.6	816,886,850	61.1	9,382,206,507	61.7

Table 44 Number of Physicians Flagged by Compliance Metrics, by Labeler  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	8,473	22	9,150	363	9,171
INSYS	-	-	14	-	14
Johnson & Johnson	1,444	-	1,484	-	1,484
Mallinckrodt	8,964	20	9,528	428	9,561
Purdue	3,475	476	4,938	496	5,067
Teva	9,014	65	9,429	375	9,455

Table 45 Total Prescriptions Flagged by Compliance Metrics, by Labeler  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	335,226	46	2,993,981	18,028	2,994,607
INSYS	-	-	703	-	703
Johnson & Johnson	18,737	-	118,460	-	118,460
Mallinckrodt	678,705	44	6,157,180	46,539	6,158,701
Purdue	80,795	1,398	669,734	18,064	670,721
Teva	666,173	172	5,384,760	36,719	5,386,217

Table 46 Number of Physicians Flagged by Compliance Metrics, by Specialty  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017 Summit, Cuyahoga)

Specialties sorted by the number of physicians that triggered Any Metric.

Physician Specialty	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Family/General	2,877	139	2,877	139	2,894
Dentistry	1,246	10	1,246	10	1,247
Surgery	1,189	22	1,189	22	1,189
Emergency/Critical	636	20	636	20	637
Obstetrics/Gynecology	493	9	493	9	495
Pediatrics	355	16	355	16	359
Cardiology	300	35	300	35	306
Neurology	272	27	272	27	275
Psychiatry	260	58	260	58	270
Oncology	259	31	259	31	260



Other Specialty	241	6	241	6	243
Ophthalmology	178	12	178	12	182
Anesthesiology	172	26	172	26	179
Urology	167	2	167	2	167
Gastroenterology/Proctology	157	13	157	13	157
Radiology	116	7	116	7	119
Dermatology	110	6	110	6	111
Nephrology	108	13	108	13	109
Physical/Occupational Rehabilitation	107	9	107	9	108
Pathology/Epidemiology	103	13	103	13	103
Rheumatology	88	9	88	9	88
Pain Medicine	85	4	85	4	85
Endocrinology	70	10	70	10	70
Pulmonology	68	10	68	10	69
Unknown	62	4	62	4	64
Orthopedics	61	2	61	2	61
Geriatrics	51	2	51	2	51
Administrative/Management	41	2	41	2	41
Allergy/Immunology	34	-	34	-	34
Veterinary	28	2	28	2	30
Hematology/Phlebotomy	17	3	17	3	17
Addiction	9	3	9	3	11
Sleep Medicine	8	1	8	1	8
Aerospace/Hyperbaric/Nuclear	5	-	5	-	5
Hepatology	5	-	5	-	5
Genetics	5	-	5	-	5
Medical Toxicology	2	-	2	-	2
Pharmacology	1	-	1	-	1
Nutrition	1	-	1	-	1
Research	-	-	-	-	-

## Flagged Prescriber 1: Dr. Clive Sinoff

**Table 47 Percentage of Prescribing Months Flagged by Compliance Metrics: Sinoff**  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	35	-	118	-	118
Johnson & Johnson	12	-	37	-	37
Mallinckrodt	35	-	119	-	119
Purdue	29	-	101	-	101
Teva	35	-	124	-	124

## Flagged Prescriber 2: Dr. Guang Yang

**Table 48 Percentage of Prescribing Months Flagged by Compliance Metrics: Yang**  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	17	-	118	-	118
Johnson & Johnson	16	-	79	-	79
Mallinckrodt	18	-	121	-	121
Purdue	16	-	89	-	89
Teva	18	-	120	-	120

Flagged Prescriber 3: Dr. Ronald Celeste

**Table 49 Percentage of Prescribing Months Flagged by Compliance Metrics: Celeste**  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	35	-	96	-	96
Johnson & Johnson	12	-	30	-	30
Mallinckrodt	34	-	101	-	101
Purdue	29	-	74	-	74
Teva	34	-	102	-	102

Flagged Prescriber 4: Dr. James Lundeen

**Table 50 Percentage of Prescribing Months Flagged by Compliance Metrics: Lundeen**  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	1	-	153	-	153
Johnson & Johnson	0	-	0	-	0
Mallinckrodt	1	-	154	-	154
Purdue	1	-	110	-	110
Teva	1	-	153	-	153

Flagged Prescriber 5: Dr. Adolph Harper

**Table 51 Percentage of Prescribing Months Flagged by Compliance Metrics: Harper**  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	26	-	54	-	54
Johnson & Johnson	0	-	0	-	0
Mallinckrodt	26	-	53	-	53
Purdue	26	-	54	-	54
Teva	26	-	53	-	53

Flagged Prescriber 6: Dr. Syed Jawed Akhtar-Zaidi

**Table 52 Percentage of Prescribing Months Flagged by Compliance Metrics: Akhtar-Zaidi**  
(IQVIA – Defendant Labelers; 1997-2006, 2008-2017)

*Percentages are based on the number of total months the physician prescribed opioids from defendant labeler.*

Labeler	50% Six-Month Increase	75% High Dosage	50% Six-Month Increase - Persistent	75% High Dosage - Persistent	Any Metric
Endo	8	-	170	-	170
Johnson & Johnson	7	-	164	-	164
Mallinckrodt	8	-	171	-	171
Purdue	8	-	171	-	171
Teva	8	-	172	-	172

#### Manufacturer to Pharmacy: Purdue Compliance Metrics

I was made aware of three additional Purdue compliance metrics for which I had sufficient data and descriptions for implementation. The three metrics are described below.

##### State Average Overall Volume<sup>5</sup>

Any purchaser whose total transactions of a particular drug type was greater than one standard deviation above the statewide per-purchaser average for the same drug type is flagged. Purchasers are grouped into cohorts by business activity, so statewide average per-purchaser averages are calculated separately for chain pharmacies, retail pharmacies and practitioners. Total transactions are measured as the total count of 867 and ARCOS transaction records, sum of dosage units, and the sum of MMEs. Metrics are calculated over three different time periods – three months, six months, and twelve months. According to Purdue's internal SOM program, these metrics were applied to a "product family," which I interpret to mean drug type (i.e., oxycodone).

##### State Average Percent of Volume<sup>6</sup>

Any purchaser whose percentage share of the state's total volume of a particular drug type was greater than one standard deviation above the statewide per-purchaser average for the same drug type is flagged. Purchasers are grouped into cohorts by business activity, so statewide average per-purchaser averages are calculated separately for chain pharmacies, retail pharmacies and practitioners. Volume is measured as the number of 867 and ARCOS transactions, the sum of dosage units and the sum of MMEs. Metrics are calculated over three different time periods – 3 months, 6 months, and 12 months. According to Purdue's internal SOM program, these metrics were applied to a "product family," which I interpret to be a specific drug type (i.e., oxycodone).

##### State Average Highest Dosage<sup>7</sup>

Any pharmacy whose proportion of the highest dosage available per drug type out of all opioid volume is more than one standard deviation above the statewide per-purchaser average was flagged. Total volume was measured as the sum of dosage units and the sum of MMEs and calculated over three different time periods – 3 months, 6 months, and 12 months. According to Purdue's internal SOM program, these metrics were applied to a "product family," which I interpreted to be a specific drug type (i.e., oxycodone).

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<sup>5</sup> PPLP004449246

<sup>6</sup> PPLP004449246

<sup>7</sup> PPLP004449246



Table 53 Flagged Chargeback Transactions by Compliance Metric  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Metric Type	Flagged Buyers	% of All Buyers	Flagged Chargebacks	% of All Chargebacks	Flagged Dosage Units	% of All Dosage Units	Total Months Flagged
State Avg Volume: 3 Months	678	52.6	426,228	39.8	242,328,542	49.2	249
State Avg Volume: 6 Months	636	49.3	451,691	42.2	253,329,798	51.5	246
State Avg Volume: 12 Months	607	47.1	470,395	43.9	260,749,599	53.0	240
State Avg Percent Volume: 3 Months	678	52.6	426,226	39.8	242,383,218	49.3	249
State Avg Percent Volume: 6 Months	635	49.3	451,847	42.2	253,405,989	51.5	246
State Avg Percent Volume: 12 Months	605	46.9	470,478	43.9	260,895,440	53.0	240
State Avg Highest Dosage: 3 Months	466	36.2	33,548	3.1	6,823,410	1.4	209
State Avg Highest Dosage: 6 Months	450	34.9	32,853	3.1	6,501,025	1.3	211
State Avg Highest Dosage: 12 Months	434	33.7	32,388	3.0	6,228,870	1.3	212
State Avg Volume: 3 Months - Persistent	678	52.6	683,664	63.9	356,004,583	72.3	249
State Avg Volume: 6 Months - Persistent	636	49.3	654,447	61.1	344,059,624	69.9	246
State Avg Volume: 12 Months - Persistent	607	47.1	616,034	57.5	325,339,274	66.1	240
State Avg Percent Volume: 3 Months - Persistent	678	52.6	682,949	63.8	355,869,323	72.3	249
State Avg Percent Volume: 6 Months - Persistent	635	49.3	653,364	61.0	343,509,623	69.8	246
State Avg Percent Volume: 12 Months - Persistent	605	46.9	618,259	57.7	327,327,317	66.5	240
State Avg Highest Dosage: 3 Months - Persistent	466	36.2	130,131	12.2	45,567,470	9.3	214
State Avg Highest Dosage: 6 Months - Persistent	450	34.9	109,618	10.2	36,855,920	7.5	214
State Avg Highest Dosage: 12 Months - Persistent	434	33.7	92,938	8.7	28,171,740	5.7	214
Any Metric	753	58.4	731,845	68.4	368,837,809	75	249

Table 54 Number of Flagged Buyers Attributed to Each Labeler  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	Total Buyers	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	487	275	268	259	275	269	260	115	108	104	302
Allergan	11	-	-	-	-	-	-	-	-	-	-
Endo	439	238	219	211	238	219	209	92	89	82	258
Janssen	12	4	5	3	4	5	3	3	3	3	5
Mallinckrodt	678	373	345	321	375	342	323	335	306	272	439
Par	382	197	190	181	198	191	182	15	15	15	203
Purdue	272	89	81	74	88	80	74	142	125	107	167
Qualitest	432	260	245	238	260	245	235	147	143	145	291
Teva	379	140	134	130	139	135	132	25	22	19	152

Table 55 Number of Flagged Buyers Attributed to Each Labeler: Persistent Flagging  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	Total Buyers	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Metric
Actavis	487	275	268	259	275	269	260	115	108	104	302
Allergan	11	-	-	-	-	-	-	-	-	-	-
Endo	439	238	219	211	238	219	209	92	89	82	258
Janssen	12	4	5	3	4	5	3	3	3	3	5
Mallinckrodt	678	373	345	321	375	342	323	335	306	272	439
Par	382	197	190	181	198	191	182	15	15	15	203
Purdue	272	89	81	74	88	80	74	142	125	107	167
Qualitest	432	260	245	238	260	245	235	147	143	145	291
Teva	379	140	134	130	139	135	132	25	22	19	152

Table 56 Number of Flagged Dosage Units Attributed to Each Labeler  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	60,847,950	63,805,065	65,617,610	60,837,940	63,709,245	65,556,395	1,257,710	1,364,645	1,556,670	71,531,050
Allergan	-	-	-	-	-	-	-	-	-	-
Endo	9,080,840	9,467,460	9,618,500	9,078,340	9,484,060	9,612,200	334,740	372,660	441,820	10,622,940
Janssen	2,940	3,600	2,820	2,940	3,600	2,820	2,220	2,020	2,020	5,260
Mallinckrodt	106,796,837	110,395,438	112,291,234	106,917,253	110,564,234	112,816,730	1,871,230	1,523,330	1,170,520	124,832,343
Par	12,081,915	13,076,915	14,225,220	11,974,800	13,082,540	14,111,970	42,570	46,690	50,020	15,215,760
Purdue	5,143,700	5,136,280	5,092,540	5,138,000	5,134,200	5,070,260	2,779,160	2,671,980	2,445,400	6,656,040
Qualitest	22,417,990	23,541,390	23,695,640	22,502,230	23,570,420	23,465,220	461,360	455,120	507,440	27,009,640
Teva	25,956,370	27,903,650	30,206,035	25,931,715	27,857,690	30,259,845	74,420	64,580	54,980	30,654,915

Table 57 Number of Flagged Dosage Units Attributed to Each Labeler: Persistent Flagging  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Persistent Metric
Actavis	84,345,325	81,333,910	78,859,280	84,351,995	81,325,290	78,746,015	14,662,840	13,810,340	12,706,320	87,042,235
Allergan	-	-	-	-	-	-	-	-	-	-
Endo	12,658,620	12,159,140	11,551,500	12,647,720	12,166,840	11,527,200	1,596,240	1,314,240	1,295,880	12,801,840
Janssen	5,360	5,520	3,940	5,360	5,520	3,940	2,700	2,380	2,380	6,860
Mallinckrodt	170,264,648	164,877,389	151,755,004	170,124,648	164,215,453	153,871,852	22,246,000	16,035,290	9,528,800	176,372,594
Par	17,477,500	17,113,495	16,849,640	17,393,710	17,199,020	16,908,400	54,830	54,830	54,830	18,040,570
Purdue	6,611,240	6,307,760	5,954,260	6,574,040	6,265,720	5,853,840	5,767,900	4,519,340	3,586,780	8,507,620
Qualitest	31,601,280	29,563,320	27,419,580	31,787,200	29,555,920	27,289,980	992,880	949,720	889,610	32,437,860
Teva	33,040,610	32,699,090	32,946,070	32,984,650	32,775,860	33,126,090	244,080	169,780	107,140	33,628,230



Table 58 Number of Flagged Buyers Attributed to Buyer Business Activity  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	Total Buyers	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Chain Pharmacy	710	441	417	398	442	416	396	321	311	298	481
Retail Pharmacy	523	237	219	209	236	219	209	145	139	136	272
Practitioner	57	-	-	-	-	-	-	-	-	-	-

Table 59 Number of Flagged Buyers Attributed to Buyer Business Activity: Persistent Flagging  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	Total Buyers	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Metric
Chain Pharmacy	710	441	417	398	442	416	396	321	311	298	481
Retail Pharmacy	523	237	219	209	236	219	209	145	139	136	272
Practitioner	57	-	-	-	-	-	-	-	-	-	-

Table 60 Number of Flagged Dosage Units Attributed to Buyer Business Activity  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Chain Pharmacy	160,898,949	169,907,377	176,162,794	160,905,809	170,110,828	176,376,769	3,438,480	3,303,060	3,173,475	192,348,451
Retail Pharmacy	81,429,593	83,422,421	84,586,805	81,477,409	83,295,161	84,518,671	3,384,930	3,197,965	3,055,395	94,179,497
Practitioner	-	-	-	-	-	-	-	-	-	-

Table 61 Number of Flagged Dosage Units Attributed to Buyer Business Activity: Persistent Flagging  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Persistent Metric
Chain Pharmacy	241,999,775	233,464,721	221,186,895	241,761,515	233,306,800	222,926,310	29,988,245	24,785,315	18,060,725	250,320,037
Retail Pharmacy	114,004,808	110,594,903	104,152,379	114,107,808	110,202,823	104,401,007	15,579,225	12,070,605	10,111,015	118,517,772
Practitioner	-	-	-	-	-	-	-	-	-	-

Flagged Pharmacy 1: Marc's 23PU

Table 62 Percent of Months Flagged by Labeler: Marc's 23PU

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months were calculated off a labeler's own chargeback data

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	14.0	18.7	19.6	13.1	18.7	19.6	0.9	1.9	6.5	32.7
Mallinckrodt	86.8	88.7	88.7	86.8	88.7	88.7	22.6	21.4	20.1	89.3
Par	-	-	-	-	-	-	-	-	-	-
Purdue	28.3	31.7	41.7	28.3	31.7	41.7	43.3	41.7	38.3	68.3
Qualitest	15.9	15.9	20.5	15.9	15.9	20.5	-	-	-	22.7
Teva	-	-	-	-	-	-	-	-	-	-

Table 63 Percent of Months Flagged by Labeler, Persistent: Marc's 23PU

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months were calculated off a labeler's own chargeback data

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Persistent Metric
Actavis	65.4	64.5	26.2	65.4	64.5	26.2	38.3	35.5	35.5	67.3
Mallinckrodt	89.3	89.3	88.7	89.3	89.3	88.7	54.7	54.7	54.7	89.3
Par	-	-	-	-	-	-	-	-	-	-
Purdue	98.3	98.3	98.3	98.3	98.3	98.3	95.0	90.0	80.0	98.3
Qualitest	45.5	45.5	45.5	45.5	45.5	45.5	-	-	-	45.5
Teva	-	-	-	-	-	-	-	-	-	-



Flagged Pharmacy 2: 8000 Euclid Ave CVS

Table 64 Months Flagged by Labeler: 8000 Euclid Ave CVS

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	15.5	19.4	21.7	14.7	20.2	19.4	1.6	3.9	7.8	36.4
Mallinckrodt	61.5	65.1	64.6	63.1	65.1	64.6	1.0	1.0	1.0	69.2
Par	2.5	5.0	7.5	2.5	5.0	5.0	-	-	-	10.0
Qualitest	18.2	25.0	31.8	18.2	27.3	31.8	-	-	-	45.5
Teva	-	-	-	-	-	-	-	-	-	-

Table 65 Percent of Months Flagged by Labeler, Persistent: 8000 Euclid Ave CVS

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months – Persistent	State Avg Percent Volume: 6 Months – Persistent	State Avg Percent Volume: 12 Months – Persistent	Avg Highest Dosage: 3 Months – Persistent	Avg Highest Dosage: 6 Months – Persistent	Avg Highest Dosage: 12 Months – Persistent	Any Persistent Metric
Actavis	76.7	57.4	57.4	76.7	57.4	57.4	70.5	70.5	70.5	83.0
Mallinckrodt	94.9	92.8	67.2	94.9	92.8	67.2	3.6	3.6	3.6	94.9
Par	72.5	72.5	72.5	72.5	72.5	72.5	-	-	-	72.5
Qualitest	61.4	56.8	50.0	61.4	56.8	52.3	-	-	-	61.4
Teva	-	-	-	-	-	-	-	-	-	-

Flagged Pharmacy 3: 14525 Euclid Ave Walgreen Co.

Table 66 Percent of Months Flagged by Labeler: 14525 Euclid Ave Walgreen Co.

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	55.7	57.4	60.7	57.4	59.0	60.7	-	-	-	63.9
Mallinckrodt	20.8	28.6	29.9	20.8	27.3	29.9	13.0	7.8	3.9	48.1
Par	-	-	-	-	-	-	-	-	-	-
Purdue	-	-	-	-	-	-	65.6	68.8	68.8	68.8
Qualitest	42.4	42.4	45.5	42.4	42.4	45.5	6.1	6.1	12.1	57.6
Teva	40.4	50.0	65.4	36.5	48.1	65.4	-	-	-	65.4

Table 67 Percent of Months Flagged by Labeler, Persistent: 14525 Euclid Ave Walgreen Co.

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Persistent Metric
Actavis	63.9	62.3	60.7	63.9	62.3	60.7	-	-	-	63.9
Mallinckrodt	35.1	32.5	29.9	35.1	32.5	29.9	19.5	19.5	19.5	53.3
Par	-	-	-	-	-	-	-	-	-	-
Purdue	-	-	-	-	-	-	75.0	75.0	75.0	75.0
Qualitest	60.6	60.6	60.6	60.6	60.6	60.6	57.6	51.5	15.2	60.6
Teva	86.5	86.5	86.5	86.5	86.5	86.5	-	-	-	86.5

## Flagged Pharmacy 4: New Choice Pharmacy

Table 68 Percent of Months Flagged by Labeler: New Choice Pharmacy  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	64.3	67.9	69.3	64.3	67.9	69.3	-	-	-	73.6
Endo	74.4	79.1	86.1	74.4	79.1	86.1	14.0	20.9	34.9	88.4
Mallinckrodt	87.2	88.4	94.5	87.2	88.4	93.3	29.3	26.8	25.6	96.3
Par	27.6	36.2	34.5	27.6	36.2	34.5	-	-	-	41.4
Purdue	12.3	21.7	30.2	12.3	21.7	30.2	-	-	-	30.2
Qualitest	79.2	87.0	92.2	79.2	87.0	90.9	5.2	5.2	10.4	93.5
Teva	37.7	37.7	37.7	37.7	37.7	37.7	-	-	-	41.5

Table 69 Percent of Months Flagged by Labeler, Persistent: New Choice Pharmacy  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Persiste nt Metric
Actavis	88.6	87.1	87.1	88.6	87.1	87.1	-	-	-	88.6
Endo	97.7	97.7	95.4	97.7	97.7	95.4	97.7	97.7	97.7	97.7
Mallinckrodt	98.8	98.8	98.8	98.8	98.8	98.8	77.4	77.4	77.4	99.4
Par	62.1	62.1	56.9	62.1	62.1	56.9	-	-	-	62.1
Purdue	36.8	36.8	36.8	36.8	36.8	36.8	-	-	-	36.8
Qualitest	98.7	98.7	98.7	98.7	98.7	98.7	61.0	61.0	61.0	98.7
Teva	41.5	37.7	37.7	41.5	37.7	37.7	-	-	-	41.5



## Flagged Pharmacy 5: Church Square Pharmacy

Table 70 Percent of Months Triggered Per Labeler: Church Square Pharmacy  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	29.6	33.7	35.7	29.6	33.7	36.7	-	-	-	40.8
Endo	-	-	-	-	-	-	-	-	-	-
Mallinckrodt	89.6	88.7	87.0	89.6	88.7	87.0	16.5	14.8	13.0	92.2
Par	48.7	43.2	43.2	48.7	43.2	43.2	-	-	-	48.7
Purdue	99.1	99.1	99.1	99.1	99.1	99.1	54.8	58.3	59.1	99.1
Qualitest	56.3	54.9	56.3	56.3	54.9	56.3	5.6	5.6	7.0	67.6
Teva	54.9	56.9	58.8	54.9	56.9	58.8	-	-	-	58.8

Table 71 Percent of Months Triggered Per Labeler, Persistent: Church Square Pharmacy  
(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Persistent Metric
Actavis	67.4	67.4	64.3	67.4	67.4	64.3	-	-	-	67.4
Endo	-	-	-	-	-	-	-	-	-	-
Mallinckrodt	89.6	88.7	87.0	89.6	88.7	87.0	83.5	83.5	83.5	94.8
Par	94.6	56.8	56.8	62.2	89.2	56.8	-	-	-	94.6
Purdue	99.1	99.1	99.1	99.1	99.1	99.1	97.4	94.8	89.6	99.1
Qualitest	70.4	63.4	60.6	70.4	63.4	60.6	7.0	7.0	11.3	73.2
Teva	60.8	60.8	60.8	60.8	60.8	60.8	-	-	-	60.8

Flagged Pharmacy 6: 1047 Kenmore Blvd Rite Aid

Table 72 Percent of Months Flagged by Labeler: Rite Aid

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months	State Avg Volume: 6 Months	State Avg Volume: 12 Months	State Avg Percent Volume: 3 Months	State Avg Percent Volume: 6 Months	State Avg Percent Volume: 12 Months	Avg Highest Dosage: 3 Months	Avg Highest Dosage: 6 Months	Avg Highest Dosage: 12 Months	Any Metric
Actavis	21.2	23.2	28.3	21.2	23.2	28.3	15.2	18.2	23.2	36.4
Mallinckrodt	37.3	39.8	45.8	35.8	40.3	46.3	2.0	1.5	-	55.2
Par	20.8	16.7	4.2	20.8	16.7	4.2	-	-	-	25.0
Qualitest	71.8	67.6	66.2	71.8	70.4	66.2	1.4	1.4	1.4	77.5
Teva	-	-	-	-	-	-	-	-	-	-

Table 73 Percent of Months Flagged by Labeler, Persistent: Rite Aid

(Chargebacks – Defendant Labelers; Varies Between 1998-2018)

Percentage of months calculated off a labeler's own chargeback data.

Labeler	State Avg Volume: 3 Months – Persistent	State Avg Volume: 6 Months – Persistent	State Avg Volume: 12 Months – Persistent	State Avg Percent Volume: 3 Months– Persistent	State Avg Percent Volume: 6 Months– Persistent	State Avg Percent Volume: 12 Months– Persistent	Avg Highest Dosage: 3 Months– Persistent	Avg Highest Dosage: 6 Months– Persistent	Avg Highest Dosage: 12 Months– Persistent	Any Persistent Metric
Actavis	86.9	85.9	68.7	86.9	85.9	68.7	63.6	63.6	63.6	86.9
Mallinckrodt	75.6	74.6	66.7	75.6	74.6	66.7	18.9	18.9	-	75.6
Par	29.2	20.8	8.3	29.2	20.8	8.3	-	-	-	29.2
Qualitest	93.0	90.1	88.7	93.0	90.1	88.7	9.9	9.9	9.9	94.4
Teva	-	-	-	-	-	-	-	-	-	-